2060 2061 207C 231E 231F 230F

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $\alpha$ | \alpha | $\theta$ | \theta | $o$ | o | $\tau$ | \tau |
| $\beta$ | \beta | $\vartheta$ | \vartheta | $\pi$ | \pi | $\upsilon$ | \upsilon |
| $\gamma$ | \gamma | $\gamma$ | \gamma | $\varpi$ | \varpi | $\phi$ | \phi |
| $\delta$ | \delta | $\kappa$ | \kappa | $\rho$ | \rho | $\varphi$ | \varphi |
| $\epsilon$ | \epsilon | $\lambda$ | \lambda | $\varrho$ | \varrho | $\chi$ | \chi |
| $\varepsilon$ | \varepsilon | $\mu$ | \mu | $\sigma$ | \sigma | $\psi$ | \psi |
| $\zeta$ | \zeta | $\nu$ | \nu | $\varsigma$ | \varsigma | $\omega$ | \omega |
| $\eta$ | \eta | $\xi$ | \xi | | | | |
| | | | | | | | |
| $\Gamma$ | \Gamma | $\Lambda$ | \Lambda | $\Sigma$ | \Sigma | $\Psi$ | \Psi |
| $\Delta$ | \Delta | $\Xi$ | \Xi | $\Upsilon$ | \Upsilon | $\Omega$ | \Omega |
| $\Theta$ | \Theta | $\Pi$ | \Pi | $\Phi$ | \Phi | | |

Table 1: Greek Letters

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $\pm$ | \pm | $\cap$ | \cap | $\diamond$ | \diamond | $\oplus$ | \oplus |
| $\mp$ | \mp | $\cup$ | \cup | $\bigtriangleup$ | \bigtriangleup | $\ominus$ | \ominus |
| $\times$ | \times | $\uplus$ | \uplus | $\bigtriangledown$ | \bigtriangledown | $\otimes$ | \otimes |
| $\div$ | \div | $\sqcap$ | \sqcap | $\triangleleft$ | \triangleleft | $\oslash$ | \oslash |
| $*$ | \ast | $\sqcup$ | \sqcup | $\triangleright$ | \triangleright | $\odot$ | \odot |
| $\star$ | \star | $\vee$ | \vee | $\lhd$[b] | \lhd | $\bigcirc$ | \bigcirc |
| $\circ$ | \circ | $\wedge$ | \wedge | $\rhd$[b] | \rhd | $\dagger$ | \dagger |
| $\bullet$ | \bullet | $\setminus$ | \setminus | $\unlhd$[b] | \unlhd | $\ddagger$ | \ddagger |
| $\cdot$ | \cdot | $\wr$ | \wr | $\unrhd$[b] | \unrhd | $\amalg$ | \amalg |
| $+$ | + | $-$ | - | | | | |

[b] Not predefined in a format based on `basefont.tex`. Use one of the style options `oldlfont`, `newlfont`, `amsfonts` or `amssymb`.

Table 2: Binary Operation Symbols

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $\leq$ | \leq | $\geq$ | \geq | $\equiv$ | \equiv | $\models$ | \models |
| $\prec$ | \prec | $\succ$ | \succ | $\sim$ | \sim | $\perp$ | \perp |
| $\preceq$ | \preceq | $\succeq$ | \succeq | $\simeq$ | \simeq | $\mid$ | \mid |
| $\ll$ | \ll | $\gg$ | \gg | $\asymp$ | \asymp | $\parallel$ | \parallel |
| $\subset$ | \subset | $\supset$ | \supset | $\approx$ | \approx | $\bowtie$ | \bowtie |
| $\subseteq$ | \subseteq | $\supseteq$ | \supseteq | $\cong$ | \cong | $\Join$[b] | \Join |
| $\sqsubset$[b] | \sqsubset | $\sqsupset$[b] | \sqsupset | $\neq$ | \neq | $\smile$ | \smile |
| $\sqsubseteq$ | \sqsubseteq | $\sqsupseteq$ | \sqsupseteq | $\doteq$ | \doteq | $\frown$ | \frown |
| $\in$ | \in | $\ni$ | \ni | $\propto$ | \propto | $=$ | = |
| $\vdash$ | \vdash | $\dashv$ | \dashv | $<$ | < | $>$ | > |
| $:$ | : | | | | | | |

[b] Not predefined in a format based on `basefont.tex`. Use one of the style options `oldlfont`, `newlfont`, `amsfonts` or `amssymb`.

Table 3: Relation Symbols

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| , | , | ; | ; | : | \colon | . | \ldotp | · | \cdotp |

Table 4: Punctuation Symbols

| | | | | | |
|---|---|---|---|---|---|
| $\leftarrow$ | \leftarrow | $\longleftarrow$ | \longleftarrow | $\uparrow$ | \uparrow |
| $\Leftarrow$ | \Leftarrow | $\Longleftarrow$ | \Longleftarrow | $\Uparrow$ | \Uparrow |
| $\rightarrow$ | \rightarrow | $\longrightarrow$ | \longrightarrow | $\downarrow$ | \downarrow |
| $\Rightarrow$ | \Rightarrow | $\Longrightarrow$ | \Longrightarrow | $\Downarrow$ | \Downarrow |
| $\leftrightarrow$ | \leftrightarrow | $\longleftrightarrow$ | \longleftrightarrow | $\updownarrow$ | \updownarrow |
| $\Leftrightarrow$ | \Leftrightarrow | $\Longleftrightarrow$ | \Longleftrightarrow | $\Updownarrow$ | \Updownarrow |
| $\mapsto$ | \mapsto | $\longmapsto$ | \longmapsto | $\nearrow$ | \nearrow |
| $\hookleftarrow$ | \hookleftarrow | $\hookrightarrow$ | \hookrightarrow | $\searrow$ | \searrow |
| $\leftharpoonup$ | \leftharpoonup | $\rightharpoonup$ | \rightharpoonup | $\swarrow$ | \swarrow |
| $\leftharpoondown$ | \leftharpoondown | $\rightharpoondown$ | \rightharpoondown | $\nwarrow$ | \nwarrow |
| $\rightleftharpoons$ | \rightleftharpoons | $\leadsto$[b] | \leadsto | | |

[b] Not predefined in a format based on `basefont.tex`. Use one of the style options

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| … | \ldots | ⋯ | \cdots | ⋮ | \vdots | ⋱ | \ddots |
| ℵ | \aleph | ′ | \prime | ∀ | \forall | ∞ | \infty |
| ℏ | \hbar | ∅ | \emptyset | ∃ | \exists | □ | \Box[b] |
| ı | \imath | ∇ | \nabla | ¬ | \neg | ◇ | \Diamond[b] |
| ȷ | \jmath | √ | \surd | ♭ | \flat | △ | \triangle |
| ℓ | \ell | ⊤ | \top | ♮ | \natural | ♣ | \clubsuit |
| ℘ | \wp | ⊥ | \bot | ♯ | \sharp | ♢ | \diamondsuit |
| ℜ | \Re | ∥ | \\| | \ | \backslash | ♡ | \heartsuit |
| ℑ | \Im | ∠ | \angle | ∂ | \partial | ♠ | \spadesuit |
| ℧ | \mho[b] | . | . | \| | \| | | |

[b] Not predefined in a format based on `basefont.tex`. Use one of the style options `oldlfont`, `newlfont`, `amsfonts` or `amssymb`.

Table 6: Miscellaneous Symbols

| | | | | | |
|---|---|---|---|---|---|
| ∑ | \sum | ⋂ | \bigcap | ⊙ | \bigodot |
| ∏ | \prod | ⋃ | \bigcup | ⊗ | \bigotimes |
| ∐ | \coprod | ⨆ | \bigsqcup | ⊕ | \bigoplus |
| ∫ | \int | ⋁ | \bigvee | ⨄ | \biguplus |
| ∮ | \oint | ⋀ | \bigwedge | | |

Table 7: Variable-sized Symbols

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| \arccos | \cos | \csc | \exp | \ker | \limsup | \min | \sinh |
| \arcsin | \cosh | \deg | \gcd | \lg | \ln | \Pr | \sup |
| \arctan | \cot | \det | \hom | \lim | \log | \sec | \tan |
| \arg | \coth | \dim | \inf | \liminf | \max | \sin | \tanh |

Table 8: Log-like Symbols

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ( | ( | ) | ) | ↑ | \uparrow | ⇑ | \Uparrow |
| [ | [ | ] | ] | ↓ | \downarrow | ⇓ | \Downarrow |
| { | \{ | } | \} | ↕ | \updownarrow | ⇕ | \Updownarrow |
| ⌊ | \lfloor | ⌋ | \rfloor | ⌈ | \lceil | ⌉ | \rceil |
| ⟨ | \langle | ⟩ | \rangle | / | / | \ | \backslash |
| \| | \| | ‖ | \\| | | | |

Table 9: Delimiters

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ⎱ | \rmoustache | ⎰ | \lmoustache | ) | \rgroup | ( | \lgroup |
| \| | \arrowvert | ‖ | \Arrowvert | ⎪ | \bracevert | | |

Table 10: Large Delimiters

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $\hat{a}$ | \hat{a} | $\acute{a}$ | \acute{a} | $\bar{a}$ | \bar{a} | $\dot{a}$ | \dot{a} | $\breve{a}$ | \breve{a} |
| $\check{a}$ | \check{a} | $\grave{a}$ | \grave{a} | $\vec{a}$ | \vec{a} | $\ddot{a}$ | \ddot{a} | $\tilde{a}$ | \tilde{a} |

Table 11: Math mode accents

| | | | |
|---|---|---|---|
| $\widetilde{abc}$ | `\widetilde{abc}` | $\widehat{abc}$ | `\widehat{abc}` |
| $\overleftarrow{abc}$ | `\overleftarrow{abc}` | $\overrightarrow{abc}$ | `\overrightarrow{abc}` |
| $\overline{abc}$ | `\overline{abc}` | $\underline{abc}$ | `\underline{abc}` |
| $\overbrace{abc}$ | `\overbrace{abc}` | $\underbrace{abc}$ | `\underbrace{abc}` |
| $\sqrt{abc}$ | `\sqrt{abc}` | $\sqrt[n]{abc}$ | `\sqrt[n]{abc}` |
| $f'$ | `f'` | $\frac{abc}{xyz}$ | `\frac{abc}{xyz}` |

Table 12: Some other constructions

`\ulcorner` `\urcorner` `\llcorner` `\lrcorner`

Table 13: AMS Delimiters

| | | | | |
|---|---|---|---|---|
| | `\dashrightarrow` | `\dashleftarrow` | `\leftleftarrows` | `\leftrightarrows` |
| | `\Lleftarrow` | `\twoheadleftarrow` | `\leftarrowtail` | `\looparrowleft` |
| | `\leftrightharpoons` | `\curvearrowleft` | `\circlearrowleft` | `\Lsh` |
| | `\upuparrows` | `\upharpoonleft` | `\downharpoonleft` | `\multimap` |
| | `\leftrightsquigarrow` | `\rightrightarrows` | `\rightleftarrows` | `\rightrightarrows` |
| | `\rightleftarrows` | `\twoheadrightarrow` | `\rightarrowtail` | `\looparrowright` |
| ⇌ | `\rightleftharpoons` | `\curvearrowright` | `\circlearrowright` | `\Rsh` |
| | `\downdownarrows` | `\upharpoonright` | `\downharpoonright` | `\rightsquigarrow` |

Table 14: AMS Arrows

`\nleftarrow` `\nrightarrow` `\nLeftarrow` `\nRightarrow`
`\nleftrightarrow` `\nLeftrightarrow`

Table 15: AMS Negated Arrows

`\digamma` `\varkappa`

Table 16: AMS Greek

`\beth` `\daleth` `\gimel`

Table 17: AMS Hebrew

| | | | | | |
|---|---|---|---|---|---|
| ℏ | `\hbar` | `\hslash` | | `\vartriangle` | `\triangledown` |
| | `\square` | `\lozenge` | | `\circledS` | ∠ `\angle` |
| | `\measuredangle` | `\nexists` | ℧ | `\mho` | `\Finv`[u] |
| | `\Game`[u] | `\Bbbk`[u] | | `\backprime` | `\varnothing` |
| | `\blacktriangle` | `\blacktriangledown` | | `\blacksquare` | `\blacklozenge` |
| | `\bigstar` | `\sphericalangle` | | `\complement` | `\eth` |
| | `\diagup`[u] | `\diagdown`[u] | | | |

[u] Not defined in `amssymb.sty`, define using the `\newsymbol` command.

Table 18: AMS Miscellaneous

| | | | |
|---|---|---|---|
| \dotplus | \smallsetminus | \Cap | \Cup |
| \barwedge | \veebar | \doublebarwedge | \boxminus |
| \boxtimes | \boxdot | \boxplus | \divideontimes |
| \ltimes | \rtimes | \leftthreetimes | \rightthreetimes |
| \curlywedge | \curlyvee | \circleddash | \circledast |
| \circledcirc | \centerdot | \intercal | |

Table 19: AMS Binary Operators

| | | | | |
|---|---|---|---|---|
| | \leqq | \leqslant | \eqslantless | \lesssim |
| | \lessapprox | \approxeq | \lessdot | \lll |
| | \lessgtr | \lesseqgtr | \lesseqqgtr | \doteqdot |
| | \risingdotseq | \fallingdotseq | \backsim | \backsimeq |
| | \subseteqq | \Subset | ⊏ \sqsubset | \preccurlyeq |
| | \curlyeqprec | \precsim | \precapprox | \vartriangleleft |
| | \trianglelefteq | \vDash | \Vvdash | \smallsmile |
| | \smallfrown | \bumpeq | \Bumpeq | \geqq |
| | \geqslant | \eqslantgtr | \gtrsim | \gtrapprox |
| | \gtrdot | \ggg | \gtrless | \gtreqless |
| | \gtreqqless | \eqcirc | \circeq | \triangleq |
| | \thicksim | \thickapprox | \supseteqq | \Supset |
| ⊐ | \sqsupset | \succcurlyeq | \curlyeqsucc | \succsim |
| | \succapprox | \vartriangleright | \trianglerighteq | \Vdash |
| | \shortmid | \shortparallel | \between | \pitchfork |
| | \varpropto | \blacktriangleleft | \therefore | \backepsilon |
| | \blacktriangleright | \because | | |

Table 20: AMS Binary Relations

| | | | |
|---|---|---|---|
| \nless | \nleq | \nleqslant | \nleqq |
| \lneq | \lneqq | \lvertneqq | \lnsim |
| \lnapprox | \nprec | \npreceq | \precnsim |
| \precnapprox | \nsim | \nshortmid | \nmid |
| \nvdash | \nvDash | \ntriangleleft | \ntrianglelefteq |
| \nsubseteq | \subsetneq | \varsubsetneq | \subsetneqq |
| \varsubsetneqq | \ngtr | \ngeq | \ngeqslant |
| \ngeqq | \gneq | \gneqq | \gvertneqq |
| \gnsim | \gnapprox | \nsucc | \nsucceq |
| \nsucceqq[u] | \succnsim | \succnapprox | \ncong |
| \nshortparallel | \nparallel | \nvDash | \nVDash |
| \ntriangleright | \ntrianglerighteq | \nsupseteq | \nsupseteqq |
| \supsetneq | \varsupsetneq | \supsetneqq | \varsupsetneqq |

[u] Not defined in `amssymb.sty`, define using the `\newsymbol` command.

Table 21: AMS Negated Binary Relations

| | newlfont/margid | oldlfont/nomargid | Requried style option |
|---|---|---|---|
| ABCdef | \mathrm{ABCdef} | {\mathrm ABCdef} | |
| $\mathcal{ABC}$ | \cal{ABC} | {\cal ABC} | |
| $\mathcal{ABC}$ | \EuScript{ABC} | {\EuScript ABCdef} | euscript |
| $ABCdef$ | \frak{ABCdef} | {\frak ABCdef} | amsfonts or amssymb |
| $ABC$ | \Bbb{ABC} | {\Bbb ABC} | amsfonts or amssymb |
| ABCdef | \mathcyr{ABCdef} | {\mathcyr ABCdef} | cyrillic |

Table 22: Math Alphabets